

WHAT IS CLAIMED IS:

1 1. A vortex inhibitor for molten metal pouring from a discharge
2 nozzle comprising:

3 a uniform castable refractory body having a generally tapering shape
4 along a longitudinal axis from a base toward a narrow end and a hollow chamber
5 positioned longitudinally to the body extending within the body; and

6 an elongated sacrificial member retained by the hollow chamber to
7 form an integral body;

8 whereby the integral body combining the refractory body and the
9 sacrificial member has a specific gravity less than the specific gravity of molten
10 metal, and is self-orienting in a narrow end downward position when supported in
11 molten metal.

1 2. The vortex inhibitor of claim 1 wherein protrusions extending
2 outwardly from the sacrificial member mount in the hollow chamber to form an
3 integral body.

1 3. The vortex inhibitor of claim 1 wherein crimps extending
2 outwardly from the sacrificial member mount in the hollow chamber to form an
3 integral body.

1 4. The vortex inhibitor of claim 1 wherein the hollow chamber
2 carries metal core upon introduction into the metal receptacle.

1 5. The vortex inhibitor of claim 1 wherein the sacrificial member
2 is hollow.

1 6. The vortex inhibitor of claim 1 wherein the sacrificial member
2 is a solid bar.

1 7. The vortex inhibitor of claim 1 wherein an exposed surface of
2 the sacrificial member is coated with a refractory material.

1 8. The vortex inhibitor of claim 4 wherein the sacrificial member
2 is coated with a refractory material.

1 9. The vortex inhibitor of claim 3 wherein the sacrificial member
2 is filled with a refractory material.

1 10. The vortex inhibitor of claim 1 wherein the body includes a
2 complex polygonal base.

1 11. The vortex inhibitor of claim 1 wherein the base is hexagonal.

1 12. The vortex inhibitor of claim 1 wherein the base is octagonal.

1 13. A vortex inhibitor for molten metal pouring from a discharge
2 nozzle comprising:

3 a uniform castable refractory body having a generally tapering shape
4 along a longitudinal axis from a base toward a narrow end and a shaft positioned
5 longitudinally to the body extending within the body; and

6 an elongated sacrificial member retained by the shaft to form an
7 integral body;

8 whereby the integral body combining the refractory body and the
9 sacrificial member has a specific gravity less than the specific gravity of molten
10 metal, and is self-orienting in a narrow end downward position when supported in
11 molten metal.

1 14. The vortex inhibitor of claim 13 wherein the shaft is hollow.

1 15. The vortex inhibitor of claim 13 wherein the shaft is solid.

1 16. The vortex inhibitor of claim 14 wherein the sacrificial
2 member contains external screw threads.

1 17. The vortex inhibitor of claim 15 wherein the sacrificial
2 member contains external screw threads.

1 18. The vortex inhibitor of claim 16 wherein an end of the shaft
2 contains internal screw threads, wherein the external screw threads on the sacrificial
3 member and internal screw threads are matable.

1 19. The vortex inhibitor of claim 14 wherein the sacrificial
2 member contains internal screw threads and an end of the shaft contains internal
3 screw threads.

1 20. The vortex inhibitor of claim 19 further comprising a nipple
2 with external screw threads at each end, wherein the nipple mates the sacrificial
3 member with the shaft.

1 21. The vortex inhibitor of claim 17 wherein an end of the shaft
2 contains external screw threads.

1 22. The vortex inhibitor of claim 21 having a coupling containing
2 internal screw threads, wherein the coupling mates the sacrificial member with the
3 shaft, whereby the body and the sacrificial member combination form an integral
4 vortex inhibitor.

1 23. The vortex inhibitor of claim 13 wherein the sacrificial
2 member is hollow.

1 24. The vortex inhibitor of claim 23 wherein the sacrificial
2 member is positioned snugly over the shaft.

1 25. The vortex inhibitor of claim 13 wherein the shaft extends
2 partially within the body.